

IN THE CLAIMS:

1. (Currently amended) A method for producing a recombinant retroviral particle, said recombinant retroviral particle comprising an RNA sequence encoding an SDI-1 polypeptide or a functional fragment thereof, the method comprising:

(a) stably transfecting an isolated producer cell line with a retroviral vector comprising in 5' to 3' order:

(1) a 5' LTR;

(2) ~~an SDI-1 coding~~ a nucleic acid sequence encoding said ~~an~~ SDI-1 polypeptide or ~~functional~~ fragment thereof, wherein said SDI-1 polypeptide or ~~functional~~ fragment thereof inhibits cell proliferation; and

(3) a 3' LTR region comprising a complete or partial U3 deletion and an insertion in place thereof, wherein said insertion comprises a polylinker sequence into which a regulatory element or a promoter has been cloned, such that upon infection of a target cell by said recombinant retroviral particle, said regulatory element or promoter becomes operatively linked to said nucleic acid sequence and regulates expression of said nucleic acid sequence in said target cell; and

(b) producing said recombinant retroviral particle in said stably transfected isolated producer cell line, wherein said retroviral particle encodes said SDI-1 polypeptide or fragment thereof.

~~and further wherein~~

~~(i) upon infection of a target cell by said recombinant retroviral particle, said SDI-1 coding sequence becomes operatively linked to said regulatory element or promoter and said regulatory element or promoter regulates expression of said SDI-1 coding sequence in said target cell; and~~

~~(ii) said isolated producer cell line comprises at least one DNA construct encoding a protein required for said retroviral vector to be~~

~~packaged.~~

2. (Previously presented) The method of Claim 1 wherein the retroviral vector comprises a DNA sequence encoding SDI-1.

3. (Currently amended) The method of Claim 1, wherein the ~~functional~~ fragment comprises amino acids 1 to 71 of human SDI-1.

4. (Currently amended) The method of Claim 1, wherein the ~~functional~~ fragment comprises amino acids 42 to 58 of human SDI-1.

5-8. (Canceled).

9. (Currently amended) The method of Claim 2, wherein the DNA sequence encoding an SDI-1 polypeptide or a ~~functional~~ fragment thereof is under transcriptional control of a regulatory element selected from the group consisting of a target cell specific regulatory element, a target cell specific promoter, and an X-ray inducible promoter.

10. (Previously presented) The method of Claim 9 wherein the regulatory element is selected from the group consisting of a Whey Acidic Protein (WAP) regulatory element and a mouse mammary tumor virus (MMTV) regulatory element.

11. (Previously presented) The method of Claim 10 wherein the retroviral vector is pLXS-SDI1.

12. (Canceled).

13. (Currently amended) An isolated producer cell line stably transfected with a retroviral vector encoding an SDI-1 polypeptide or a ~~functional~~ fragment thereof, said retroviral vector comprising in 5' to 3' order:

- (a) a 5' LTR;
- (b) a nucleic acid sequence encoding an SDI-1 polypeptide or a ~~functional~~ fragment thereof, wherein said SDI-1 polypeptide or ~~functional~~ fragment thereof inhibits cell proliferation; and
- (c) a 3' LTR region comprising a complete or partial U3 deletion and an insertion in place thereof, wherein said insertion comprises a polylinker sequence into which a regulatory element or a promoter has been cloned, such that upon infection of a target cell by said recombinant retroviral

particle, said regulatory element or promoter becomes operatively linked to said nucleic acid sequence and regulates expression of said nucleic acid sequence in said target cell.

~~and further wherein~~

- ~~(i) upon infection of a target cell by a recombinant retroviral particle encoded by said retroviral vector, said SDI-1 coding sequence becomes operatively linked to said regulatory element or promoter and said regulatory element or promoter regulates expression of said SDI-1 coding sequence in said target cell; and~~
- ~~(ii) said isolated producer cell line comprises at least one DNA construct encoding a protein required for said retroviral vector to be packaged.~~

14. (Previously presented) The isolated producer cell line of Claim 13, wherein the isolated producer cell line is a human cell line.

15-18. (Canceled).

19. (Previously presented) A pharmaceutical composition comprising the isolated producer cell line of Claim 13 and a pharmaceutically acceptable carrier or diluent.

20-25. (Canceled).

26. (Currently amended) A method for introducing a DNA sequence encoding an SDI-1 polypeptide or a functional fragment thereof into a human cell *in vitro*, the method comprising infecting the human cell with a retroviral particle produced by the isolated producer cell line of Claim 13.

27. (Previously presented) A method for treating a subject having a tumor or restenosis, the method comprising administering into said tumor or a site of restenosis of said subject a therapeutically effective amount of a recombinant retroviral particle produced by the isolated producer cell line of Claim 13.

28-30. (Canceled).

31. (Previously presented) The method according to Claim 27 wherein the administering is by injection of the recombinant retroviral particle into said tumor or said site of restenosis of said subject.

32. (Canceled).

33. (Currently amended) A method for producing a recombinant retroviral particle, ~~said recombinant retroviral particle~~ comprising an RNA sequence encoding an SDI-1 polypeptide that inhibits cell proliferation, the method comprising:

(a) stably transfecting an isolated producer cell line with a retroviral vector comprising in 5' to 3' order:

- (1) a 5' LTR;
- (2) a ~~coding~~ nucleic acid sequence encoding ~~the~~ an SDI-1 polypeptide, ~~wherein said SDI-1 polypeptide that~~ inhibits cell proliferation; and
- (3) a 3' LTR region comprising a complete or partial U3 deletion and an insertion in place thereof, wherein said insertion comprises a polylinker sequence into which a regulatory element or a promoter has been cloned, such that upon infection of a target cell by said recombinant retroviral particle, said regulatory element or promoter becomes operatively linked to said nucleic acid sequence and regulates expression of said nucleic acid sequence in said target cell; and

(b) producing said recombinant retroviral particle in said stably transfected isolated producer cell line;

~~and further wherein~~

- ~~(i) upon infection of a target cell by said recombinant retroviral particle, said SDI-1 coding sequence becomes operatively linked to said regulatory element or promoter and said regulatory element or promoter regulates expression of said SDI-1 coding sequence in said target cell; and~~
- ~~(ii) said isolated producer cell line comprises at least one DNA construct encoding a protein required for said retroviral vector to be packaged.~~

34-35. (Canceled).

36. (Previously presented) The method of Claim 33 wherein the regulatory

element or promoter is selected from the group consisting of a target cell specific regulatory element, a target cell specific promoter, and an X-ray inducible promoter.

37. (Previously presented) The method of Claim 36 wherein the regulatory element is selected from the group consisting of a Whey Acidic Protein (WAP) regulatory element and a mouse mammary tumor virus (MMTV) regulatory element.

38. (Previously presented) The method of Claim 37 wherein the retroviral vector is pLXS-SDI1.

39. (Currently amended) An isolated producer cell line stably transfected with a retroviral vector encoding an SDI-1 polypeptide that inhibits cell proliferation, said retroviral vector comprising in 5' to 3' order:

- (a) a 5' LTR;
- (b) a nucleic acid sequence encoding an SDI-1 polypeptide, ~~wherein said SDI-1 polypeptide~~ that inhibits cell proliferation; and
- (c) a 3' LTR region comprising a complete or partial U3 deletion and an insertion in place thereof, wherein said insertion comprises a polylinker sequence into which a regulatory element or a promoter has been cloned, such that upon infection of a target cell by said recombinant retroviral particle, said regulatory element or promoter becomes operatively linked to said nucleic acid coding sequence and regulates expression of said nucleic acid sequence in said target cell.

and further wherein

- ~~(i) upon infection of a target cell by a recombinant retroviral particle encoded by said retroviral vector, said SDI-1 coding sequence becomes operatively linked to said regulatory element or promoter and said regulatory element or promoter regulates expression of said SDI-1 coding sequence in said target cell; and~~
  - ~~(ii) said isolated producer cell line comprises at least one DNA construct encoding a protein required for said retroviral vector to be packaged.~~
40. (Previously presented) The isolated producer cell line of Claim 39, wherein

the isolated producer cell line is a human cell line.

41-42. (Canceled).

43. (Previously presented) A method for introducing a DNA sequence encoding an SDI-1 polypeptide into a human cell *in vitro*, the method comprising infecting the human cell with a retroviral particle produced by the isolated producer cell line of Claim 39.

44. (Currently amended) A method for producing a recombinant retroviral particle, ~~said particle~~ comprising an RNA sequence encoding a polypeptide comprising amino acids 1 to 71 of human SDI-1, the method comprising:

(a) stably transfecting an isolated producer cell line with a retroviral vector comprising a DNA sequence which encodes the polypeptide comprising amino acids 1 to 71 of human SDI-1, wherein:

- (i) the polypeptide comprising amino acids 1-71 of human SDI-1 inhibits cell proliferation; and
- (ii) said producer cell comprises at least one DNA construct encoding a protein required for ~~said retroviral vector to be packaged~~ packaging; and

(b) producing said recombinant retroviral particle in said stably transfected isolated producer cell line.

45. (Currently amended) An isolated producer cell line stably transfected with a retroviral vector encoding a polypeptide comprising amino acids 1-71 of human SDI-1, said retroviral vector comprising in 5' to 3' order:

- (a) a 5' LTR;
- (b) a nucleic acid sequence encoding a polypeptide comprising amino acids 1-71 of human SDI-1, wherein said polypeptide comprising amino acids 1-71 of human SDI-1 inhibits cell proliferation; and
- (c) a 3' LTR region comprising a complete or partial U3 deletion and an insertion in place thereof, wherein said insertion comprises a polylinker sequence into which a regulatory element or a promoter has been cloned, such that upon infection of a target cell by said recombinant retroviral

particle, said regulatory element or promoter becomes operatively linked to said nucleic acid sequence and regulates expression of said nucleic acid sequence in said target cell.

and further wherein

- ~~(i) after infection of a target cell by a recombinant retroviral particle encoded by said retroviral vector, said SDI-1 coding sequence becomes operatively linked to said regulatory element or promoter and said regulatory element or promoter regulates expression of said SDI-1 coding sequence in said target cell; and~~
- ~~(ii) said isolated producer cell line comprises at least one DNA construct encoding a protein required for said retroviral vector to be packaged.~~

46-47. (Canceled).

48. (Previously presented) A method for introducing a DNA sequence encoding a polypeptide comprising amino acids 1-71 of human SDI-1 into a human cell *in vitro*, the method comprising infecting the human cell with a retroviral particle produced by the isolated producer cell line of Claim 45.

49. (Currently amended) A method for producing a recombinant retroviral particle, ~~said particle~~ comprising an RNA sequence encoding a polypeptide comprising amino acids 42 to 58 of human SDI-1, the method comprising:

- (a) stably transfecting an isolated producer cell line with a retroviral vector comprising a DNA sequence which encodes the polypeptide comprising amino acids 42-58 of human SDI-1, wherein:
  - (i) the polypeptide comprising amino acids 42-58 of human SDI-1 inhibits cell proliferation; and
  - (ii) said producer cell comprises at least one DNA construct encoding a protein required for said retroviral vector to be packaged; and
- (b) producing said recombinant retroviral particle in said stably transfected isolated producer cell line.

50. (Currently amended) An isolated producer cell line stably transfected with

a retroviral vector encoding a polypeptide comprising amino acids 42-58 of human SDI-1, said retroviral vector comprising in 5' to 3' order:

- (a) a 5' LTR;
- (b) a nucleic acid sequence encoding a polypeptide comprising amino acids 42-58 of human SDI-1, wherein said polypeptide comprising amino acids 42-58 of human SDI-1 inhibits cell proliferation; and
- (c) a 3' LTR region comprising complete or partial U3 deletion and an insertion in place thereof, wherein said insertion comprises a polylinker sequence into which a regulatory element or a promoter has been cloned, such that upon infection of a target cell by said recombinant retroviral particle, said regulatory element or promoter becomes operatively linked to said nucleic acid sequence and regulates expression of said nucleic acid sequence in said target cell.

and further wherein

- ~~(i) upon infection of a target cell by a recombinant retroviral particle encoded by said retroviral vector, said SDI-1 coding sequence becomes operatively linked to said regulatory element or promoter and said regulatory element or promoter regulates expression of said SDI-1 coding sequence in said target cell; and~~
- ~~(ii) said isolated producer cell line comprises at least one DNA construct encoding a protein required for said retroviral vector to be packaged.~~

51-52. (Canceled).

53. (Previously presented) A method for introducing a DNA sequence encoding a polypeptide comprising amino acids 42-58 of human SDI-1 into a human cell *in vitro*, the method comprising infecting the human cell with a retroviral particle produced by the isolated producer cell line of Claim 50.

54. (Previously presented) A recombinant retroviral particle produced by the method of Claim 1.

55. (Previously presented) A pharmaceutical composition comprising the



Serial No. 09/058,546

retroviral particle of Claim 54 and a pharmaceutically acceptable carrier or diluent.

56-66. (Canceled).